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The Sulphuration Treatment of Mange.*

By W. S. LORNIE, M.R.C.V.S., Turriff.

Mr. President and Gentlemen,—I volunteered to give a paper on this subject, as I think it is necessary for every member to come forward and take an active share in the work of the Society, thereby assisting the secretary indirectly.

By reading a paper, one lays oneself open to criticism, often adverse criticism, and though I have been told by an authority in the profession that "mange bugs simply thrive and feed on SO_2," I have not yet lost faith in this, one of my pet subjects.

My attention was directed to this method when serving with the E.E.F.

I was then in command of No. 16 Veterinary Hospital, Kantara, when orders were given that we should build a gas chamber or bath, similar to a loose box, only big enough to hold a horse; the animal to be treated in this chamber with SO_2, and to prevent inhalation of the gas, a conical cloth hood was to be placed round the neck of the animal and the eyes to be protected by goggles.

We were given a few days to build the chamber. Plans were drawn, mud bricks made, and, thanks to a very efficient staff, the chamber was ready for use in two days' time.

Our first experiments were failures. One animal pulled back into the fumes and was gassed, whilst a few developed pneumonia and were destroyed.

Further attempts were postponed until the autumn, when mange cases became more numerous.

We were now more fortunate, for, during the interval, the chamber was rebuilt, and we had heard of the French successes by the method.

We adopted a generator similar to the French type, and by introducing steam with the SO_2, the phenomenal success ultimately obtained led us to build a ten-chamber bath.

With these preliminary remarks the following is a short account of (1) the building and appliances; (2) the method of treatment; (3) technique adopted; (4) record of a few cases; (5) notes on the system.

BUILDINGS AND APPLIANCES.

Ten-chamber bath.—This was built of mud bricks, with a roof sloping to the rear, supported by corrugated iron and plastered over with mud. The chambers were similar to loose boxes placed side by side, with only sufficient room for a horse to stand. These chambers are separate, so that a restless animal could be removed without interfering with others under sulphuration.

Within and extending the entire length of the building and connecting with each chamber were the following: (1) exhaust air pipe; (2) steam supply pipe; (3) SO_2 supply pipe; (4) common chimney from boiler fires.

In each chamber a permanent hip rail was fitted, and when it was necessary to decrease the amount of room required, an adjustable sliding hip rail was placed in position. A raised platform is necessary when small animals such as donkeys are to be treated, and for large animals the lowering of the ground floor was sufficient.

Ventilators were placed at the rear of the chambers, each having an observation plug to note the quantity of gas, and one had a window for noting temperatures.

The front of the building was composed of a wooden frame which was built into the walls, and the doors of the chambers were fixed to this frame.

The doors had an upper and lower part, *i.e.*, half doors, the upper being a skeleton to which the hood was attached. To give greater security when an animal was being treated, breast rails were fitted immediately behind the lower half-door. The boilers for producing steam under pressure were at each end of the building and at the rear of the centre chamber the SO_2 generator was placed.

Exhaust air pipe.—The air in the chambers must be drawn off by the generator, otherwise the pressure produced would cause a leakage of gas through the hood and hinder operations. Small perforations extended the entire length of this pipe, an equal supply of air being thereby obtained from the chambers. Ultimately gas is drawn off, the fire suffers, and has to be renewed. The position of the exhaust is at the upper part of the building in proximity to the doors.

Steam supply pipe.—This pipe is connected with the two boilers and is placed at the upper part of the building above the ventilators. It is also connected with each chamber, being provided with half inch perforations which could be plugged or opened as required, depending upon the number of chambers one desired to employ. This gave an equal supply of heat and moisture to each chamber.

Gas supply pipe.—Situate at the rear of the chambers on the ground surface and connected with the generator. It also had half inch perforations, and could be used in a similar manner to the former.

* Presented at a meeting of the North of Scotland Division of the N.V.M.A.

Common chimney.—This extended along the roof through the chambers to meet a common flue at the centre. The heat from the chimney helped considerably to increase the internal temperature of the chambers and ensures that the minimum amount of heat is lost.

The generator.—This was made from an ordinary oil drum, with an inlet and outlet to which pipes from the bath were attached. The sulphur fire is placed inside the drum, through a door, and a farriers' blower draws off the air from the bath by the exhaust pipe and forces the gas to the bath by the SO_2 pipe.

The hood.—The hood was made of double canvas cloth of a conical shape and fitted round the patients' face, and not the neck or poll as in the early trials, the whole being kept in position by means of a collarette. This type of hood ensures that the vapour comes in contact with the sub-maxillary space, ears, poll, and parotid areas. Various materials were experimented with for making hoods—*i.e.*, jaconette, blanket, horse rubbers and leather, but the double canvas method was found to be the most suitable. The acid soon destroyed the hoods and they had to be renewed at intervals. With a single cloth hood, the vapour escaped to some extent and this was remedied by spraying with a solution of hypo or washing soda.

This hood was suitable for horses, mules, donkeys and camels.

Collarette or head stall.—This was made to fit the face of the animal and was built on a framework of iron bent to the required shape, and this gave a spring-like action and a tight fit to the face. The outer material was canvas cloth, and this was padded with tow or wool. The parts of the collarette are: (1) brow band; (2) cheek pad; (3) nose band; (4) chin strap; (5) poll strap.

These names explain their use and the whole are fastened by pillar straps when the animal was placed in position.

The Method of Treatment.

Previous to admitting a patient, the doors and ventilators were opened. The animal was then placed in position by being backed into the chamber. The hip and breast rails were adjusted, door closed; the hood put on and drawn up tight. The collarette was finally adjusted round the face and hood and any space where gas might escape was packed with tow. Goggles may be used, but are seldom necessary if the patient's head is to the prevailing wind. The head is now fixed by pillar chains and a manger with a feed placed in front.

With these preliminaries completed the ventilators are closed and the treatment proceeds by pumping in the gas and turning on the steam. At the end of the specified period, *i.e.*, one or two hours, the ventilators are opened and gas allowed to escape. The doors are opened gradually, and when the bath is free from the mixture, the collarette and hood are removed and the animal walks out.

With careful application the animal inhales no gas and does not appear to be affected in any way, except that the colour of the hair may become slightly bleached or lighter.

The concentration of gas required is about 5 to 6 per cent., and temperature, 90—100° F.

The French workers, Lepinay, Vigel and Chollet say a lighted candle placed at the observation window is extinguished when the concentration of gas is sufficient.

Technique.

1st day: Clip the animal all over.
Wash with sea water, scrubbing with a good brush.
Dry thoroughly, and if cold, walk the animal about.

2nd day: Patient placed in bath. SO_2 and steam applied for two hours.
On completion, head, ears, and submaxillary space to be washed and the animal is well hand-rubbed all over.

3rd day: Thorough grooming; treatment with calcium sulphide.

4th day: Wash with sea water. Good grooming. Exercise. Ample food.

5th day: Repeat 3rd day.

6th day: Repeat 4th day.

7th day: Repeat SO_2 and steam for two hours if necessary.

8th day: Repeat 3rd day.

9th day: Patient sweated in bath by means of steam for one to two hours. This cleans the coat.

Precautions.

1.—Disinfected halters, etc., to be provided after bathing.
2. Stall must be thoroughly disinfected.
3. Regular grooming for elimination of epidermal debris.
4. Complete isolation.

Note.—Halters, head collars, etc. should be dispensed with, and the animal should be fastened by a shackle to the fore foot.

Accidents.

During treatment, any escape of gas should be remedied immediately, otherwise it may cause conjunctivitis or ophthalmia. The animal may inhale SO_2, or may pull his head into the chamber and be gassed.

If an animal has been treated with an oily or fatty dressing on some former occasion, sulphurous acid will cause a mild blistering of the skin. This does not appear to affect the coat, and it rapidly disappears.

The temperature should never exceed 100°F.

Note.—A restless animal should be taught by placing him in the bath and feeding him a few times, previous to applying the treatment.

Record of Cases Treated by Sulphurous Acid Method.

Case No. 1.—P.222. A bay gelding. Disease: Sarcoptic mange. Microscopical examination.

Exposures.	Date.	Time.	Gas.	Remarks.
1st	20/9/18	2 hours.	SO_2	
2nd	24/9/18	2 ,,	SO_2	Pruritis less.
3rd	26/9/18	2 ,,	SO_2	Pruritis absent.
4th	30/9/18	2 ,,	SO_2	Improving.
5th	11/10/18	2 ,,	SO_2 & Steam	Final bath.
6th	14/10/18	1 ,,	Steam only.	

Convalescent 15th October, and transferred to convalescent stable for observation. On the 27th October, the animal had no recurrence, and appears cured.

This was a very bad case of sarcoptic mange, and was placed on the casting lines as "Incurable." Previous history shows that the animal had been treated and dressed five times, *i.e.*, twice with sulphur and oil, twice with sulphur and horse fat, and once with calcium sulphide, and no improvement resulted. A marked difference in the animal's condition was noted every day from the first exposure. The coat soon began to regain its normal appearance, and the hair grew rapidly. No other treatment was given, except frequent sea water baths, regular grooming and exercise, and intensive feeding.

The bath was employed for chlorine gas experiments from the 2nd to the 9th October, and this accounts for the delay between the 4th and 5th exposures.

Days :—25.

Case No. 2.—S.235. A chestnut mare.

Exposures.	Date.	Time.	Gas.	Remarks.
1st	21/9/18	2 hours.	SO_2	
2nd	23/9/18	2 ,,	SO_2	Improved.
3rd	29/9/18	2 ,,	SO_2	Improved greatly and coat softer.
4th	11/10/18	2 ,,	Steam.	

Sea water baths given regularly.

This was also a very bad case, similar to No. 1, having had the same treatment, and on the casting list. It was so bad that it seemed worthless, and a case for destruction; covered with mange and badly corrugated in many parts.

After the first SO_2 bath there was a marked improvement, and in a week the coat had a healthier appearance. The head, poll, ears, and sub-maxillary area gave considerable trouble, and were repeatedly dressed with calcium sulphide with no apparent effect. On the 12th October these areas were dressed with H_2SO_3. The next day showed some improvement, but the sub-maxillary space seemed much the same with pruritis, though absent in other parts.

17/10/18—Passed SO_2 gas through H_2O, and dressed the animal's head, etc. with the solution.
23/10/18—Head appears much better. Giving daily washes with H_2SO_3.
27/10/18—Sub-maxillary space better. Head and ears still troublesome.

At the time of writing the animal is gradually becoming convalescent, and there is a great improvement in condition, and except for a few mangey spots about the poll and ears, the case appears cured, and should be transferred to the observation stable in a few days.

Convalescent 31/10/18.

Days :—40.

Case No. 3.—B.24/214. A bay gelding. Disease, Psoroptic mange. Microscopical examination.

Exposures.	Date.	Time.	Gas.
1st	22/9/18	2 hours.	SO_2
2nd	28/9/18	2 ,,	SO_2

Convalescent 10/10/18.

Still under observation. No recurrence, 27/10/18.

Days :—18.

Case No. 4. C.5/78. A brown mare. Disease, Sarcoptic mange. Microscopical examination.

Exposures.	Date.	Time.	Gas.	Remarks.
1st	25/9/18	2 hours.	SO_2	
2nd	1/10/18	2 ,,	SO_2	
3rd	8/10/18	2 ,,	SO_2	

Convalescent, 10/10/18. No recurrence, 27/10/18.

Days :—15.

Case No. 5.—S.299. A dark chestnut mare. Disease, sarcoptic mange. Microscopical examination.

Exposures.	Date.	Time.	Gas.	Remarks.
1st	27/9/18	2 hours.	SO_2	Sea water baths at regular intervals.
2nd	11/10/18	1 ,,	SO_2 & steam.	
3rd	14/10/18	1 ,,	Steam.	

Salt water baths at intervals of two days.

A badly affected case, with corrugations on neck, throat, and on flank, near stifle. Improved rapidly from commencement of the method. Previously treated by old methods.

13/10/18—Slight pruritis.
17/10/18—Ever so much better. Dressed head, poll and neck with H_2SO_3.
23/10/18—Transferred convalescent.
31/10/18—No recurrence.

Days :—26.

Case No. 6.—S.257. A bay gelding. Disease: Sarcoptic mange. Microscopical examination.

Exposures.	Date.	Time.	Gas.	Remarks.
1st	2/10/18	2 hours.	SO_2	
2nd	12/10/18	2 ,,	Steam.	

13/10/18—Has improved greatly. A former case treated with oil dressings and calcium sulphide.
15/10/18—Transferred convalescent.

Days :—14.

Case No. 7.—T.1702. A bay gelding. Disease: Psoroptic mange.

Exposure.	Date.	Time.	Gas.	Remarks.
1st	10/10/18	2 hours.	SO_2	Convalescent
2nd	13/10/18	2 ,,	H_2SO_3	31/10/18.

13/10/18—Improving, but still some pruritis.
26/10/18—Pruritis absent. Coat improving rapidly. Lesions healing well.

Days :—21.

Case No. 8.—25/D2. A grey mare. (Turk). Disease: Psoroptic mange. Microscopical examination.

Exposures.	Date.	Time.	Gas.	Remarks.
1st	10/10/18	2 hours.	H_2SO_3	Animal covered with ticks. These were found to be destroyed at the end of the first exposure
2nd	20/10/18	2 ,,	H_2SO_3	

12/10/18—Pruritis gone. Looks better. Removed all dead tissue and debris.
16/10/18—Marked improvement.
26/10/18—Almost convalescent.
28/10/18—Convalescent.

This case had a very sore back on admission, and the treatment seemed to heal the wounds rapidly.

Days :—18.

Case No. 9. D1/41. A black stallion. (Turk). Disease: Sarcoptic mange. Microscopical examination.

Exposures.	Date.	Time.	Gas.	Remarks.
1st	11/10/18	2 hours.	H_2SO_3	All ticks on animal dead at end of first exposure.
2nd	21/10/18	2 ,,	H_2SO_3	

16/10/18—Pruritis absent, and animal improving.
23/10/18—Almost convalescent.
27/10/18—Transferred convalescent to debility.

Days :—16.

Case No. 10. D6/217. A grey mule. Disease: Psoroptic mange. Microscopical examination.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	12/10/18	½ hour.	H_2SO_3	Animal restless and taken out at the end of half an hour.
2nd	19/10/18	1½ „	H_2SO_3	

13/10/18—Pruritis less.
27/10/18—Pruritis absent. Lesions healthy looking and healing well.
28/10/18—Almost convalescent.
31/10/18—Convalescent.
Days :—19.

Case No. 11.—D4/714. A bay gelding. Disease : Psoroptic and sarcoptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	12/10/18	2 hours.	H_2SO_3	Did not sweat so much as usual.
2nd	23/10/18	2 „	H_2SO_3	

17/10/18—Improving rapidly.
25/10/18—Almost convalescent.
28/10/18—Convalescent.
Days :—16.

Case No. 12. C29/224. A bay mare. Disease : Sarcoptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	12/10/18	1½ hours.	H_2SO_3	
2nd	22/10/18	2 „	H_2SO_3	
3rd	28/10/18	2 „	H_2SO_3	

13/10/18—Looks easier. Feeding well.
23/10/18—Improving. But head still troublesome.
27/10/18—Head lesions healing.
31/10/18—Almost convalescent.
14/11/18—Convalescent.
Days :—23.

Case No. 13.—D2/126. A chestnut mare. Disease : Psoroptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	13/10/18	1½ hours.	H_2SO_3	

17/10/18—Improved.
27/10/18—Big improvement. Pruritis absent. Coat nice and soft.
4/11/18—Convalescent.
Days :—22.

Case No. 14.—C30/307. A brown mule. Disease : Psoroptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	14/10/18	1 hour.	H_2SO_3	
2nd	25/10/18	2 „	H_2SO_3	

26/10/18—Coat clean and healthy looking. Improving all round, and in condition.
28/10/18—Convalescent.
Days :—14.

Case No. 15.—D4/10. A bay gelding. Disease : Psoroptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	14/10/18	1 hour.	H_2SO_3	

17/10/18—Much better.
21/10/18—Big improvement.
4/11/18—Convalescent.
Days :—21.

Case No. 16.—D/72. A grey stallion. Disease : Psoroptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	14/10/18	1 hour.	H_2SO_3	

17/10/18—Improving.
23/10/18—Improving greatly.
27/10/18—Almost convalescent.
4/11/18—Convalescent.
Days :—18.

Case No. 17.—D7/58. A bay gelding. Disease : Psoroptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	15/10/18	1 hour.	H_2SO_3	

19/10/18—Convalescent.
Days :—4.

Case No. 18.—D7/212. A brown mule. Disease : Psoroptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	15/10/18	1 hour.	H_2SO_3	

19/10/18—Convalescent.
Days :—4.

Case No. 19.—D6/25. A bay stallion. Disease : Psoroptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	15/10/18	1 hour.	H_2SO_3	

17/10/18—Convalescent.
Days :—2.

Case No. 20.—C30/98. A grey gelding. Disease : Sarcoptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	15/10/18	1 hour.	H_2SO_3	
2nd	21/10/18	2 „	H_2SO_3	
3rd	3/11/18	2 „	H_2SO_3	

4/11/18—Almost at convalescent stage. But head troublesome.

Case No. 21.—D5/88. A bay gelding. Disease : Sarcoptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	16/10/18	1 hour.	H_2SO_3	
2nd	28/10/18	2 „	H_2SO_3	

23/10/18—Improving, but slight blistering.
4/11/18—Still improving.

Case No. 22.—C26/141. A chestnut stallion. Disease : Sarcoptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	16/10/18	1 hour.	H_2SO_3	
2nd	5/11/18	1 „	H_2SO_3	

A very bad case. Previously treated with chlorine gas.
17/10/18—Looks easy. Pruritis less. Coat cleaner. Hidebound condition gone.
23/10/18—Greatly improved. New hair growing rapidly.
27/10/18—Improvement in general condition. Disease becoming less.
4/11/18—Almost convalescent.
12/11/18—Convalescent.
Days :—26.

Case No. 23.—T.879. A chestnut gelding. Disease : Sarcoptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	20/10/18	2 hours.	H_2SO_3	Previously treated with chlorine.

23/10/18—Pruritis almost gone.
4/11/18—Convalescent.
Days :—14.

Case No. 24.—D10/78. A bay stallion. Disease : Psoroptic mange.

Expos-ures.	Date.	Time.	Gas.	Remarks.
1st	1/11/18	1 hour.	H_2SO_3	

5/11/18—Convalescent.
Days :—4.

Notes on the Treatment.

Prior to using SO_2 and steam, the agent in use was only SO_2, and this gas gave encouraging results.

It was noticed that the temperature of the chamber rose 80°F.—90°F. Some animals perspired in areas and the smell of the gas remained on the body for days. Further observation showed that animals

recovered rapidly if they had perspired during exposure, especially with those cases showing lesions on the back. This led to the introduction of steam in an endeavour to raise the temperature to 100°F., and sweat the animal thoroughly. It was also thought that the pores and sweat glands would open freely—causing the parasites to come to the surface—due to excessive moisture and lack of oxygen and to the darkness of the chamber, pruritis being worst at night. SO_2 being soluble in H_2O would unite with the moisture, forming H_2SO_3, and as this is probably the required parasiticide in its nascent state the parasite would be destroyed on contact, or the vapour may neutralize the irritant principle deposited by the living mite, or they may have been dehydrated. This SO_2 and steam method gives ideal results, and we adopted the system in all other cases.

Animals exposed to this mixture were sometimes slightly blistered, but this did no harm to the coat, and the latter soon takes on a healthy appearance, even after one bath. As a rule the coat feels soft, like fur, and does not show that dry and harsh unthrifty appearance found after dressing with ordinary mange dressings. The hard scab-like formations are rapidly exfoliated, becoming macerated, soft and easily removed, and in a few days' time a healthy condition results with the hair beginning to grow. Corrigation folds soon diminish and gradually disappear. In every case treated, the animal seemed relieved—little pruritis remained and they began to feed and improve daily. Feeding during sulphuration keeps an animal occupied and it often quietens a restless one. It prevents them from sleeping or trying to lie down, and with a badly affected case it is probably the first proper feed an animal has had with comfort since the disease developed. Intensive feeding is necessary during his energetic treatment.

Raw surfaces such as sore backs are only slightly irritated by the gas and with no evil effects. Some sore back cases were exposed for two hours and the wounds were healthy afterwards, showing that the gas had a sterilizing effect on wounds.

Sulphur sub. was employed for producing the gas, and occasionally the pipes became blocked with material of a rubber-like consistence, and it was advisable to clean the pipes daily. The amount of sulphur required was about 2lbs. per case.

SO_2 can of course be obtained as a liquid, but with the method under review the heat generated was a consideration in its favour. SO_2 is very soluble in cold water, which takes up more than 30 times its volume, and the solution may be kept unchanged as long as air is excluded, but access of oxygen gradually converts H_2SO_3 into H_2SO_4—although dry SO_2 and oxygen may remain in contact any length of time without change.

It does not appear to be a chemical compound, and looks like a simple solution similar to CO_2 in H_2O.

In view, therefore, of the solubility of SO_2, the technique of treatment can be varied by thoroughly sweating the animal by means of steam alone and then pumping in SO_2.

H_2SO_3 is said to be one of the best known germicides, but living *Psoroptes* placed in a solution were still alive at the end of 30 minutes.

Cases of mange treated with the solution require several dressings, but the same result is not obtained as in exposure to the vapour. Several control animals were dressed by this system and at the end of a month they did not show sufficient improvement to warrant a further extended trial and chiefly owing to the fact that H_2SO_4 forms as stated above.

Heat appears to be essential for a quick cure, as the acaricidal property of a medicament is always enhanced by increasing the temperature. According to the French Ministry of War, it is six times greater at 27°C. than at 15°C., and forty times greater at 37°C. than at 17°C.

In addition to the treatment of mange, animals badly affected with ticks were sulphurated for two hours and at the end of that period all the ticks were destroyed. They appeared soft in consistence—macerated—easily removed and ruptured on a little pressure. The dead remains were easily brushed off when the animal dried.

Many cases of eczema, dermatitis, ringworm, and lice have been treated successfully, and in every case the coats assumed the same soft and kindly condition—the vapour acting as an excellent skin and hair tonic—a rapid growth of hair resulting.

Camels suffering from mange were also placed under sulphuration—just before the armistice, and the few cases treated responded satisfactorily. (Simpson).

The whole method—though somewhat empirical in its adaptation—may solve the problem of sarcoptic mange, but like all other methods of treatment, it is the personal element that counts for good results.

We always intended to treat a dog suffering from follicular mange, but were unable to obtain a suitable patient. I believe a friend in the A.A.V.C. copied the method with the idea of experimenting in Australia.

After treating over 200 cases I have formed the opinion that the sulphuration treatment of mange is an ideal method—it is clean—expeditious, hygienic and economical.

It created a centre of interest at Kantara and was visited by many of the chief army authorities, including the late Commander-in-Chief and the Sirdar.

Every encouragement was given by the army departments to carry on the experiments, and I was greatly indebted to Q-M. Captain O. Preston and R.S.M. Swanston, M.S.M., R.A.V.C., for their mechanical skill and determination to make the experiment a success.

Horse Mobilisation.

LIGHT TYPE BREEDING URGENCY.

Brig.-General T. R. F. Bate, C.M.G., Inspector of Remounts, delivered a lecture on "Horse Mobilisation" at the Royal United Service Institution on Wednesday afternoon, November 16th, 1921, the chair being occupied by Lieut.-General Sir Noel Birch, K.C.M.G., C.B., R.A. (Director-General of the Territorial Army).

In the course of his lecture General Bate stated that the decreased horse population of the country made the

necessity for a well-organised scheme of horse mobilisation essential, because it would mean a well organised remount service. After describing the building up of the organisation which produced the horses for mobilisation in 1914, and how that organisation worked, the lecturer stated that in 1920 a census of all horses in Great Britain was taken by the Police at the instigation of the Army Council, which gave district officers a guide to help them in preparing classified lists of all horses in their districts suitable for military purposes. It had been recognised that that was an unnecessarily laborious task for every year, and it had been decided that in future the War Office would allot a quota to be produced by each command, which in turn would allot a quota to each district, the basis of calculation in the first place being taken from the lists compiled in 1920-21. It would be immediately realised that, owing to constant changes of horse population from one cause or another, the basis of calculation would have to be renewed from time to time. To meet that, it was proposed to have a census of all horses at periodic intervals, which had not yet been exactly fixed, and subsequently full classification lists would be prepared by district officers and the various quotas changed if necessary to meet the fluctuations. Any boarding-out scheme for horses could only be a complement to the general scheme for impressment. In 1914 there were three sorts of earmarked horses on which the military authorities could lay their hands quickly in time of national emergency, namely: (1) the cavalry boarding-out scheme by which the cavalry regiments boarded-out from their ranks the number of horses to bring them up to war strength; (2) subsidised horses; and (3) registered horses. The latter two classes no longer existed. The cavalry scheme on a slightly different basis was re-started in 1919, but had not proved successful, and it was the intention to merge it into the £7 10s. 0d. boarding-out scheme, which was started as the result of a recommendation of a committee on the Demobilisation of Army Horses which sat in 1917, of which the chairman was Sir Gilbert Greenall, the objects being (*a*) to provide a reserve of suitable horses on mobilisation; (*b*) to meet the requirements of the Territorial Force for their annual training; and (*c*) to encourage the breeding of horses. Its first inception embraced the somewhat ambitious total of 100,000, but actually the greatest number ever boarded-out was about 15,000, and there were now out about 12,000. The scheme had proved its usefulness so far as the supply of horses for the annual training of the Territorial Army was concerned, and it was obviously a most useful reserve in the event of partial mobilisation; in fact, the Territorial Army could not be efficiently horsed for their annual training without a boarding-out scheme. There appeared to be two main schools of thought in regard to the problem of the future, one of which asked what was the use of making any preparations with regard to horses when the Army of the future would all be run by motor traction, and the other which disliked new ideas and was biased in favour of the horse. Personally he thought that, as usual, the half-way between the extremes was likely to be correct. In any case he did not think motor traction was so far advanced that it was possible to neglect making preparations for mobilising the horse. The number of horses suitable for military purposes was an almost daily diminishing quantity in this country. Quite 75 per cent. of the horses required for mobilisation were light draught horses, and there was no class of horse which was being so quickly ousted by motor traction in trade as that. The numbers of cavalry horses required for mobilisation were certainly less than those of light draught horses, but the number in the country from which the Army could draw was dreadfully small. Going round the country he hardly ever saw a cavalry trooper, so that it was most necessary to have a reserve of cavalry horses as well as of gun horses, particularly in view of the fact that they required special training. Unless something far-reaching and effective was done towards the promotion of light horse breeding, the country would be liable in the very near future to find itself in an unpleasant, if not hopeless, position. In his opinion one of the first palliatives of the present situation was the publication of a fixed programme of the approximate number of horses which would be purchased annually for the next five years by the Army Authorities. The success in keeping the armies supplied with horses throughout the late war was mainly due to our ability to transport vast numbers of animals from abroad, but in future wars the general opinion seemed to be that the difficulties of transporting thousands of animals from America or elsewhere would be so increased as to probably make the task impossible. All that went to show that in another war the country would be obliged to rely almost entirely on its own resources, and such a prospect should keep the horse question a live factor for some years to come.

The Horse in the War.

ADDRESS BY PROFESSOR MCCALL.

The part played by the horse in the Great War was extolled in an address delivered to the City Business Club in the Polytechnic Restaurant, Glasgow, on November 17th, by Professor John R. McCall, of Glasgow Veterinary College.

Professor McCall, who held a commission in the Veterinary Corps during the war and served in both the Eastern theatre and in France, said that it was regrettable that the public should lack knowledge of the noble services rendered by the horse. The horse never failed us; hence we heard nothing about him. When war broke out the British Army possessed 25,000 horses. In the first twelve days of the war 165,000 horses were impressed into the Army service in Great Britain alone. In the year 1918 there were over 1,000,000 horses and mules in the British Army. Did these figures show that the horse in the recent war had outlived his day and generation? He thought not. North America furnished the largest number of any part of the world to the horse strength of our armies. The speaker spoke of the great waste in the early stages of the war, due to climatic conditions and the fact that the horses had to live out in the open day and night. This wastage entailed constant replacement. In the East the mules were found to be the hardier for the work. In France the number of mules to horses would be about one to four. Motor haulage was largely used for the Army Service Corps work, but for the artillery, particularly the Royal Horse Artillery and the Royal Field Artillery, the guns were hauled by horses. What of the cavalry? Some people regretted that the cavalry did not get into action at the termination of the war. But what about Allenby's crusade into Palestine and the advance into Jerusalem? That was achieved by the horse.

THEIR WORK IN FRANCE.

Dealing with the work of the horses in France, the speaker said that the best type under the severe conditions was the Percheron-cross, thousands of which were brought from North America. Our home breeds, like the Clydesdale and the Shire, did excellent work under great hardships, but they had been used to a life of comfort at home, and felt the rigours sooner. In the spring of 1918 they had 30,000 horses treated in hospital in France—medical, surgical, gas, and other cases. In all previous wars the loss from contagious disease, particularly glanders, was very great. In the last war glanders never got a footing in France owing to the fact that all the animals were inoculated and tested periodically. To cope with mange they had large baths, the water of which was chemically treated, and the horse had to swim through the bath. To chloroform the horses they had a concentrated process that enabled them to start operating three minutes after the horse was placed on the operating table. Horses, like human beings, became "run down" under war conditions, and they had depôts for what was practically a rest cure. The British Tommy's aptitude in learning horsemanship was praised by the speaker, who concluded

by supporting Mr. Cunninghame Graham's recent plea against the traffic in worn-out horses to the Continent. We should at least take steps, he said, to ensure that animals that had given of their service and strength in the interests of man should be humanely despatched within our own borders. (Applause.)—*Glasgow Herald.*

"Express" Call for Clean Milk.

A "TINNY" NOTE.

The report of the Production and Distribution of Milk Committee of the Council of the British Dairy Farmers' Association contained the following resolutions, which were ordered to be circulated to the various authorities directly concerned:—

(*a*) This Council regrets the articles disparaging the use of English fresh milk, lately appearing in the *Daily Express*, coincident with advertisements of foreign condensed milk as likely to lead to the substitution of condensed for fresh milk to the harm of the consumer, especially infants, and to the increase of imports of foreign produce to the disadvantage of British Agriculture.

(*b*) This Council entreats the Government to make such reasonable regulations for the control of milk as may be necessary to guard it from exaggerated and misleading journalistic efforts of the nature of the articles recently appearing in the *Daily Express*, and emphasise the importance that every care must be taken to ensure of its absolute cleanliness.

(*c*) This Council requests the Ministries of Agriculture and Health to take steps to impress upon the public, and especially those concerned with baby feeding, the unequalled food value of fresh milk to the great advantage of national physique and British Agriculture.

Last of the Fire Brigade Horses.

THE OFFICIAL FAREWELL.

The official ceremony of parting with the last two horses of the London Fire Brigade took place on November 24th, outside the High Street, Kensington, Fire Brigade Station, which is behind John Barker's furniture store. The real "good-byes" were said inside, where the children of the firemen, who live in the station, fed "Lucy" and "Nora" for the last time. Nora served at the front with a Lancer regiment.

The spectators formed hollow squares outside the station to give room for the fire-engines to appear. Major Simmons, Chairman of the London County Council, who was standing with Mr. A. R. Dyer, chief officer of the London Fire Brigade, and Colonel E. Ball (chairman of the Fire Brigade Committee of the L.C.C.), pressed the station fire-bell and there was a race between old and new—horses and motors. The fire escape was first down the slope into the High Street, followed by two motors, while amid the noise could be heard the harness with its little bells dropping into place on Nora and Lucy, who had sprung out of their boxes when the bell rang. As they came out at a brisk pace, all the officials stood at attention, and the children and the shopping parties from the High Street cheered. Nora and Lucy took a half mile drive away from the High Street at their old speed, and then, more leisurely, returned. Later in the day they went to Headquarters in Southwark Bridge Road, where they were formally returned to the contractors, Messrs. Bramley, who handed them over to Our Dumb Friends League.—*The Times.*

The Veterinary Record.

3rd December, 1921.

INTOLERANCE.

A common trait of the human character which has been in evidence throughout the ages, among all peoples, is an intolerance on the part of youth for the old-fashioned methods and reasoning of the earlier generation and the reciprocal intolerance of the more matured for the impetuosity of thought and action of youth.

This want of capacity of endurance on the part of the one for the other is really the outcome of a perfectly natural incompatibility of temperament. A judicious mixture of the fiery enthusiasm of youth tempered by matured sagacity is probably the ideal combination for real progress. Unfortunately, however, the law of nature prohibits the development of such a combination in the individual. Such stabilised vigour commonly arises from a combination of individuals possessing the characteristics of their respective ages and striving harmoniously for a common cause.

In such a group of individuals, however, there are almost invariably present disturbing elements which, even if they fail in wrecking the calm deliberations of their co-workers, nevertheless succeed in seriously limiting the value of those deliberations.

Perhaps it is that the green god jealousy is largely responsible for this non-endurance, which may even develop into fanatical persecution. Youth is jealous of the atmosphere of authority which envelops the utterances and supports the actions of the aged or more experienced, while these, for their part, are fearful of being outrivalled in the councils of their fellows, and are suspicious that flamboyant youth is seeking to usurp their status.

While, as has already been said, this intolerance is the perfectly natural outcome of an inherent incompatibility, there is a period in the lives of all men and in the existence of all corporations when this natural tendency must be overcome at any cost, even by the sacrifice of personal pride and ambition by self-effacement.

In the very near future, perhaps even now, our profession will be passing through the gravest crisis in its history. One false step and the well-intentioned, if misguided, action of to-day may be the cause of a lasting anathema by the generations of veterinary surgeons that are to be.

Suspicion, jealousy, and self-interest must find no place in the individual minds of our body corporate.

To-day, as perhaps never in our previous history, the truth of our well-chosen motto will be manifest:

VIS UNITA FORTIOR.

A house which is divided *cannot* stand.

Professor Shave Presentation Fund.

It has been decided to close this Fund at an early date.

The promoters regret that the response has not been as great as was anticipated, and urge all those who are interested to remit their donation to the Hon. Treasurer without delay.

J. B. BUXTON, *Hon. Treasurer.*

Brockwell Hall, Herne Hill, S.E. 24.

Abstracts and Reviews.

Stripping the Ventricle and Cricotomy in Hemiplegia Laryngis.

Laryngeal stridor, "whistling," "high breathing," "roaring," etc., in the horse is due in from 96—99 per cent. of cases to paralysis of the left recurrent laryngeal nerve. This nerve ennervates all the muscles of the larynx except the crico-thyroideus. Laryngeal stridor is usually the result of paralysis of the left posterior—and lateral—cricoarytenoideus muscles, in consequence of which the left side of the larynx fails to dilate during inspiration. The column of inspired air forces the paralysed arytenoid cartilage and the relaxed vocal cord downwards and inwards towards the lumen of the glottis, where they obstruct inspiration, cause dyspnœa of varying degree, and produce a sound whose pitch depends upon the tension and rate of vibration of the vocal cord and arytenoid cartilage.

The condition may be primary or secondary.

Primary laryngoplegia arises without attributable cause, though hereditary predisposition and the early and severe training of the horse are put forward as suggestions. This type usually occurs between the ages of 3 and 6 years. Secondary laryngoplegia may follow such diseases as influenza and dourine, or acute lead poisoning, or it may follow the ingestion of certain plants, such as monkshood and lucerne or alfalfa; cessation of function in the nerve being due in each case either to a toxic neuritis or to a primary degeneration of the fibres.

Before deciding to operate, one should consider two points with special care:—

(1) Be sure that the objectionable noise originates in the larynx and not in the nasal passages.

(2) Examine the larynx by manipulation. If it is enlarged, hard and unyielding, this indicates chondritis, and in the author's experience such subjects are not benefited by the operation.

The horse is given a warm mash 12—18 hours before the operation and nothing further till about three hours after the operation has been performed. The patient should be cast and chloroform administered. When the surgical stage of anæsthesia is reached, he should be pushed into the dorsal position, and from this time to the completion of the operation no further chloroform is needed.

The instruments required are:—Razor, convex scalpel, spring retractor, two or three pairs of artery forceps, pair of curved scissors, sharp-pointed concave bistoury, pair of dressing forceps, a tracheotomy tube, tape, cotton wool or gauze and a tape-suturing needle.

The Operation.

The primary incision should extend, as nearly as possible, in the median line, from the body of the thyroid (Adam's apple) through the crico-thyroid membrane and the ring of the cricoid-cartilage to the anterior border of the first tracheal ring.

Having placed the spring retractors in position, and after inspecting the larynx, the first step is to incise the mucosa entirely around the top of the ventricle. The author recommends that a smooth, round stick about 10 inches long, about as thick as a fountain pen and bent in the middle at an angle of 45°, be used as a pry; the end being inserted into the ventricle causes it to be expanded and readily pushed towards the middle of the laryngeal lumen. The bend in its middle makes it easy to hold the pry with the left hand, in such a way that the right is not interfered with when it is used to incise the ventricular mucosa. The concave bistoury is then used to divide the mucous membrane round the entire outer border of the ventricle. This part of the operation must be conducted with great care, to avoid injuring the subjacent structures, particularly the perichondrium of the arytenoid cartilage. The pry is then removed and the edge of the circumscribed ventricular mucosa is gently lifted with the side of the jaws of an ordinary pair of artery forceps. When it has been teased away from the underlying structures for a distance of about $\frac{1}{4}$ inch all the way round, a firmer grasp should be obtained with the forceps, and the remaining attachments may then be broken down with the point of the index finger. Ablation by Eberlein's method is a modification of the procedure detailed above. The index finger of the left hand is used as a pry. From a point half an inch from the arytenoid and exactly on the upper edge of the vocal cord make an incision through the mucous membrane up to the arytenoid, and then for a further half inch upward along the anterior border of the arytenoid, parallel with this border and quite close to it. The point of the index finger is then introduced into this angular incision and pushed carefully under the mucosa to the bottom of the ventricular sac, which is then pushed up through the mouth. The everted sac is grasped with forceps and carefully removed with scissors. This completes the operation on the left side.

As regards removal of the right sac, the author states that whereas he used to remove it in all cases, he now does so only when, in his opinion, the movement on the right side seems deficient; and that since he has worked on this plan his results have been more satisfactory. He has found the right side to be implicated in about 10 per cent. of cases.

One or both ventricles having been removed, the blood is gently removed and the interior moistened with 10 per cent. solution of iodoform in sulphuric ether. Having removed the retractors, a specially-constructed tracheotomy tube, with four inches of stiff white rubber tubing attached to the end, is inserted between the first tracheal ring and the cricoid, and fixed in position by tape sutures.

The advantages claimed for this tube are :—

(1) It is light and cannot be displaced.
(2) Does not occupy any part of the larynx, even when the head is strongly flexed.
(3) The rubber tubing keeps it parallel with the lumen of the trachea and prevents injury of the tracheal mucosa.
(4) It is easily removed and cleansed.

The after treatment recommended by this author does not differ markedly from that of other authorities.

In his opinion the danger of cricotomy has been inordinately magnified and chondritis affecting the arytenoid and thyroid cartilages are, he considers, the main cause of failure. His reasons for advocating cricotomy are :—

(1) The larger wound prevents aspiration of food particles, saliva, etc.
(2) The "burr," he considers, unless in the hands of a very skilful operator, often fails because it does not remove the mouth of the ventricle. He therefore advocates the dissection method, and for this the larger wound is essential.
(3) It allows freer and more methodical procedure.

Results obtained in 500 cases where the operation was conducted on the above lines were as follows :—

5 months after operation.	Horses.	Percentage.
Cured	355	71
Improved	97	19·4
Same, or worse ...	48	9·6

It should be noted that in twenty of the failures chondritis was present before operation, and if one excludes these as unsuitable subjects, the percentage of failures is reduced to 5·8.

[Surgical Treatment of Laryngoplegia in the Horse, by J. W. Adams.—*Journal of American Vet. Med. Association*, November, 1921.]

D. G.

A flock of pedigree sheep, following the example of their leader, fell, one after another, into a well at Harleston, near Beccles, and were all killed, either by drowning or suffocation. The well, which was in a field near a ruined cottage, was overgrown with foliage. The leader of the flock, while eating the leaves, fell through into the well. The sixteen other members of the flock, true to the habits of their kind, followed, and all were dead before they could be rescued.

Clinical and Case Reports.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases.

Nicotine Poisoning in the Cat.

By Hamilton Kirk, M.R.C.V.S., Wigmore St., W.

Symptoms.—A remarkable case recently came under my observation in which a cat of mature age was brought to me suffering from what appeared to be acute gastritis. The history was that nothing whatever could be retained by the stomach for even a few moments, which, unfortunately, I proved to be true. Energetic measures were taken to relieve the gastric irritation, but within 24 hours the cat was the subject of convulsions, followed by coma and death.

Post-mortem.—This revealed a singular state of affairs, for the stomach was choked with a tangled mass of swollen tobacco, like a wad of wet teased-out cotton wool, which evidently could not leave the stomach by either orifice. Some cigarette paper was also present, the length of which showed that the cat had eaten a cigarette end about three quarters of an inch long. Death was due to nicotine poisoning. I have often heard of monkeys chewing tobacco, but the habit as practised by cats would appear to be attended with fatal consequences.

Undiagnosed Canine Osseous Disease.

By P. M. Evershed, M.R.C.V.S., Nottingham.

I have read with much interest the article on the above subject by Mr. J. H. White, M.R.C.V.S., in the *Veterinary Record* of November 12th last, and beg leave to record some similar cases which have occurred in my practice during the last two-and-a-half years.

During that period seven cases have come to my notice, viz. :—

1.	Mongrel dog,	about 7 years old.
2.	Fox terrier dog,	about 6 ,, ,,
3.	Collie dog,	about 7 ,, ,,
4.	Sare mongrel pom,	about 8 ,, ,,
5.	Fox terrier dog,*	about 8 ,, ,,
6.	Fox terrier dog,	about 12 ,, ,,
7.	Collie dog,	about 10 ,, ,,

History.—The usual history is that the animal has been off colour for some time. He has not been able to bark as usual, and has had difficulty in eating and drinking.

Symptoms.—When seen by me the disease has usually been well advanced. The jaws are slightly open. Sometimes a little saliva hangs from the mouth. There is usually a muco-purulent nasal discharge, often tinged with blood. The breath is fœtid. The appetite is usually fairly good; but the animal is quite incapable of biting hard substances. He drinks with difficulty and wastes as much as he swallows. The temperature varies from 101° to 103°F. The animal is thin, weak, dull and listless, and apparently has no interest in life.

On examination, both upper and lower jaws are found to be quite soft, and can be twisted in all directions, but the teeth remain firm in their sockets.

As the disease advances, the eyeballs seem to bulge, and the animal gets thinner and weaker.

At the owner's request, I have in several cases tried treatment, but without success.

Post-mortem.—The bones of the cranium, face, and upper and lower jaws are usually all affected, in that they are soft, pliable and easily penetrated with a knife. The other bones of the body appear to be normal. According to Möller—in his "Diseases of the Dog"—canine literature does not show that "osteomalacia" exists in dogs; but is not this a case of "osteomalacia"? If not, what is it?

I am grateful to Mr. White for recording his experience of the disease, and await with much interest the result of Professor Glynn's examination of the specimen sent him.

A Note on Vaccination in Contagious Abortion.

By W. S. Stevens, M.R.C.V.S., Wincanton.

I was very pleased to see the remarks of Mr. Male in the discussion on bovine abortion, in a recent number of the *Veterinary Record*. We owe a great debt to the originators of the vaccine, but for practical test results one must turn to the general practitioner. I am in complete accord with what Mr. Male says. It is certainly remarkable, but one can vaccinate pregnant cattle without abortion following. Repeated vaccination is often necessary to prevent abortion year by year. With regard to the abscesses that sometimes form at the seat of inoculation, I believe the explanation is that through mischance the needle penetrates into the muscle or fascia, possibly on account of sudden movement by the beast during the period of injection of the vaccine. I have found that vaccination is far more successful than has been claimed by its sponsors. Unfortunately, however, many cows do become barreners after attacks of contagious bovine abortion, and vaccination does not help us. In one herd of cattle only those that aborted were vaccinated; they were isolated for about three months with very great care, and the disease did not spread.

Amputation of Prolapsed Rectum in a Sow.

By H. J. Loveless, R.V.C., London.

History.—Whilst assistant last vacation to a veterinary surgeon in the Eastern Counties, a call was received from a small-holder to see a sow which was ill. On arrival, I found a white cross-bred sow in poor condition, with inversion and prolapse of seven inches of rectum. Her pigs were a month old. I cleansed and replaced the part and sutured across.

The next day the stitches had burst, the part was down again; and it was in a badly damaged condition; therefore it was decided to amputate.

Operation.—The sow was secured to a post and two drams of chloral hydrate in two ounces of water were given orally.

After the lapse of ten minutes, anæsthesia was established. The procedure recommended by Möller, translation by Dollar, for the amputation of prolapsed rectum in pigs was followed by me. I saw the case a month afterwards; the stitches had not been removed; recovery was uneventful and complete. I have heard of the practice of giving cones and improvised cones made of elder wood to the sphincter ani; but the experience of this case would certainly warrant the adoption of Möller's method of amputation in any future case of prolapse of the rectum in a sow I might have occasion to attend.

Association Reports.

The Central Veterinary Society.

Forty-Eighth Annual Dinner.

A meeting of the Society was held at the Holborn Restaurant, Kingsway, London, W.C., on Thursday, November 3rd, 1921, Mr. G. H. Livesey, President, in the chair.

The following signed the attendance book:—Majors P. J. Simpson, D.S.O., P. W. Dayer Smith, E. M. Perry, Messrs. M. S. Evans, C. Macara Finnie, W. S. King, H. B. Collet, J. B. Buxton, A. E. Willett, F. M. Willett, Colonels H. S. Moseley, and R. C. Cochrane, and Hugh A. MacCormack, *Hon. Secretary*.

Nominations.—The following gentlemen were nominated and will come up for election at the next meeting:—Mr. T. H. Tranter, M.R.C.V.S., 30 High Street, Beckenham; Major A. J. Williams, F.R.C.V.S., D.S.O., R.A.V.C., Royal Military College, Camberley; Captain C. J. R. Lawrence, O.B.E., M.R.C.V.S., R.A.V.C., Royal Army Veterinary School, Aldershot; Major T. G. Heatley, O.B.E., M.R.C.V.S., Woodbridge, Suffolk.

Annual Dinner.

Immediately after the meeting, the Forty-eighth Annual Dinner of the Society was held. Mr. G. H. Livesey, the President, occupied the chair. There was a large attendance and many ladies; 93 sat down. Among those present were Major-General Sir L. J. Blenkinsop, K.C.B., D.S.O., Lieut.-Col. Nathan Raw, C.M.G., M.P., Captain Walter Elliot, M.P., Dr. Walter Harrison, Past President the Dental Institute, London, E. T. Heathercoat, Esq., J.P., President of the Pharmaceutical Society of Great Britain, Professor Leonard S. Dudgeon, C.M.G., C.B.E., W. T. Harvey, Professor J. MacQueen, Major F. Hobday, C.M.G., Colonel R. C. Cochrane, Messrs. J. W. McIntosh, J. Willett, Dr. Tait, Professor G. H. Wooldridge, Messrs. J. B. Buxton and F. Bullock.

The loyal toasts were proposed and duly honoured.

"The Imperial Forces."

Mr. J. B. Buxton, in proposing the toast of "The Imperial Forces," said that in view of the fact that it was probably the last time the toast would be proposed at the Central Society's dinner, owing to

the activities of the Washington Conference and of the League of Nations, he felt rather honoured. Everyone had too prominently in his mind the activities of the past seven years to render it necessary for him to call to mind the extraordinarily fine work that had been performed by the Imperial Forces. He thought it was meet on such an occasion as the present, as a tribute to the memory of those who had made the supreme sacrifice, to temper merriment with a little sadness. There were many reasons why on such occasions the names inscribed on an oaken tablet at 10 Red Lion Square should be brought to memory, if only for a moment.

The toast was duly honoured.

Lieut.-Colonel R. C. COCHRANE, C.B.E., responded. He said the reply to the toast was rendered comparatively easy by the services which had been performed by the Forces in the past seven years. In a few days the third anniversary of the Armistice would be celebrated, and naturally the mind turned to those who had made the supreme sacrifice and also to those who had been permanently disabled. The care of the disabled should be considered by everyone as a sacred and honourable duty, and he hoped that on November 11th that duty would not be forgotten. The Imperial Forces at the present time were undergoing the process of reconstruction. He would not attempt to say what would happen, but he was certain that, whatever the effect of reconstruction might be, the Royal Army Veterinary Corps would carry out the duties assigned to it as it did in the war, when so many members of the veterinary profession, both from the Colonies and in this country, came to the assistance of the Empire. (Cheers.) At the present time there existed a very satisfactory cadre establishment in every Territorial Division, and he thought every member of the profession should assist his Territorial Division to the utmost in peace as he did in war, so that the R.A.V.C. might be a credit to the Army and also to the profession. (Cheers.)

"THE CENTRAL VETERINARY SOCIETY."

Captain WALTER ELLIOT, M.P., in proposing the toast of "The Central Veterinary Society," said he had hoped that possibly his researches in veterinary science had penetrated to the great Central Society in London, that some researches of his in rickets in pigs had possibly been the cause of the great honour, but he found, unfortunately, that those things were utterly unknown in London, and his fame as a veterinarian had never been adumbrated in the Central Veterinary Society (laughter). There was, however, another field of activity in which he had been very much interested lately. About a year ago there was formed, under the Development Commission, a committee to investigate the present state of veterinary education and to see what support should or could be given by the central authorities towards research in animal disease. He had been on that committee for about a year past, sitting with medical men and members of the veterinary profession, and going into the state of veterinary education throughout the United Kingdom, and to some extent in the Dominions. He thought the need for such a society as the Central was very clearly shown in the figures the committee was able to get. The apathy and neglect towards the veterinary profession in these islands, which derived so great an amount of their wealth from flocks and herds, was almost unbelievable. He knew of one veterinary school which obtained £900 a year from the Government and that had to be allocated to the salaries of ten professors. The committee had discussed up to that time why it was so difficult to get medical men to take much interest in veterinary science and research, but when that figure came out, there was no more query amongst the doctors. It was realised that the only way to get medical men to take an interest in veterinary science would be to raise the emoluments to a point at which the doctor would begin to covet them. (Laughter). The figures for the Dominions and for India were extremely interesting. South Africa spent on its veterinary work, £123,000 a year—for a small white population about as numerous as that of one of our great cities. There were 29 men working at research. In India the annual budget was £30,000 a year for all India, and there were four posts for men indulging in research, of which two were not filled, and the only research station was on the top of a hill one and a half days' journey from the nearest town. It was not astonishing to learn that in India for protective serum and vaccine, there were two fees—one a small one for administering and the other, a very much larger fee, given by the farmer for not administering the serum or vaccine. (Laughter). Those were things that caused one furiously to think. In South Africa recently, mainly owing to the work of Sir Arnold Theiler and his colleagues in stamping out the disease of Lamziekte, thousands of good acres of farm land had been added to the resources of the country, land which before had been unusable. The importance of veterinary science to Great Britain could not be over-estimated. If it were possible to carry a staff even as great as the staff of the Union of South Africa, he was quite certain it would repay itself in a very short time in the results. (Cheers.) One of the duties of such a society as the Central was to keep before the rulers and masters the absolute economic value of science in the fact that, when it was given a chance, it could deliver the goods, that it had delivered them in the past, and that it would deliver them again. (Cheers.)

He thought possibly it was the Department presided over by Major-General Sir L. Blenkinsop from which he had derived his admiration for the veterinary profession. In the war he was associated with veterinary officers and medical officers, and they had the closest of liaisons and were the best of friends and good fellows. Doctors were a very clannish set of people and possibly that very close association of the regimental veterinary officer and the medical officer did more to break down the hidebound prejudice of caste between the two professions than

many years of writing papers and conferring with each other. Therefore he was only too glad to have the chance of meeting his veterinary friends and of attempting to repay in some small degree the great debt of hospitality and good fellowship which he owed to the great veterinary profession.

He considered, however, that on such an occasion as the present they should not confine themselves to mutual admiration and discussions as to what splendid fellows they were and how enormously superior to all who had preceded them, but should attempt to derive results from such an evening. He was very gratified to learn from the President that the members of the Central were taking advantage of the dinner to distribute medals for work done in the past, particularly for a piece of research carried out by one of their own members in a small country practice, a thing that could not be too highly commended. (Cheers.) Research was, after all, the vital spirit in medical and veterinary science, which were both branches of the one great master science of biology, and biology was the science of the future, the science to which the veterinary profession had enormous contributions to make. He was sure that in veterinary science lay far greater advantages for physiology and pathology than doctors dreamed of. There was a great number of problems constantly presented, and the veterinary surgeon had the inestimable advantage over the medical profession, that practically every case they had could be carried to a post-mortem. (Laughter.) It was too grave and dangerous a power to put in the hands of the medical profession, but, having that great advantage, the veterinary profession would be greatly to blame if they could not make use of it. When one considered all the facts of biology and physiology, one realised that one was only beginning to trench on unexplored territory. The veterinary profession had the tremendous privilege of having a great mass of clinical material constantly at hand. It was with the clinician that the future lay. He could not say what importance he attached to the obtaining by the veterinary profession of that great body of information which lay locked up in the heads of the inarticulate farmers. That information should be obtained and codified and placed on record, so that scientific men might take advantage of the material. There were amongst farmers clinicians of the highest order of intelligence, but they did not know modern scientific phraseology, and it was impossible for them to record their knowledge. When they died that knowledge died with them, and their successors had to start acquiring it again. If it were possible to obtain the information which those men possessed, it would be of enormous value to veterinary science and the key to many baffling problems in medicine. He thought the medical profession could only gain by association with the great body of knowledge possessed by the veterinary profession, from which the medical profession were temporarily divorced.

In conclusion, he said that it was absolutely necessary for Members of Parliament to meet at frequent intervals the bodies of the general and technical public, without whom they were apt to think, when tramping the lobbies of the House of Commons, that they were accomplishing some useful work in the world. It was only when one met men who were doing the work of the world that one realised after all, how futile or how temporary all the work in the legislative chamber was if it was not backed up by hard, honest, everyday science and research by the professions and the workers throughout the world.

The toast was drunk with acclamation.

The PRESIDENT, in reply, thought the Central Society deserved the enthusiasm that had been put into the toast, because it held in the veterinary profession a position equalled by no other. It was the senior and the Metropolitan Society, and as such should give a lead to the societies throughout the Empire in the good work which it did for the profession. Every society such as the Central depended for its very existence upon the goodwill of the members. If the members did not care about it, it gradually sank into oblivion, but if the members did care, and appreciated the work it was capable of doing, the Society prospered. The Central Society had prospered for fifty years, and it had done so, simply because it had been run by a band of enthusiastic fellows and had been in the hands of most capable officers. (Hear, hear.) No matter how enthusiastic members might be, unless their enthusiasm and their anxiety for the good of the profession were directed into proper channels and well organised, they had not their full effect. The Central during the past had been exceptionally fortunate. It started in a small way, but the fervour had been kept up throughout the whole time, and that had been due to a great extent to the energy that had been put into it by the Council and the Presidents, but most of all by those gentlemen who had come forward and voluntarily given their services as secretaries. (Cheers.) He had had some experience of the working of societies, having been president for seven years of one and having visited a number of others throughout the country, and on that subject he thought he knew what he was talking about. For a society to be successful it needed a capable and energetic secretary. (Cheers.) The Central was very fortunate in having a secretary who continually inspired the members with fresh enthusiasm, and he thought it was largely due to Mr. MacCormack—(cheers)—that the Society occupied the position it did to-day. Last year was the jubilee of the Society and was an exceptionally good year. The President that year was one of the most distinguished members of the veterinary profession, Major-General Sir Layton Blenkinsop. (Cheers.) The Society had now made a great change by electing as President a north country-man who had practised on the south coast and who was now no longer in active practice. His only connection with London was his sincere affection for the Central Veterinary Society and for his profession. Therefore he took it as a special compliment and one for which he was really sincerely grateful, that the members had seen

fit under such circumstances to elect him as President. He could assure them that they had gratified one of the greatest ambitions he had ever had in his life. He hoped that, with the industry which he would bring to the office of President and the help he would receive from all the Fellows of the Society, the coming year would be an excellent follow-on to the previous one and would carry the Society a great step forward in the good work that it had to do in its second half-century. Last year a most important step was taken by the Society—a step that gave a lead to the whole profession—to bring the veterinary profession into closer relation with the medical profession. (Hear, hear.) That step was taken so that the two professions might meet upon a common ground, namely, the elimination of disease from man and animals. The veterinary profession was now to meet and act with the medical profession in the study of comparative pathology and comparative medicine. That had been brought about through the energy of one of the Society's most conspicuous Fellows, a man of whom every member of the profession was proud, Major Frederick Hobday. (Cheers.) Major Hobday had acted as a kind of liaison officer between the two professions, and he hoped he would continue to do so for many years to come. He hoped also that during the next year the good work would be furthered and that the medical profession would be met on even closer terms and perhaps some basis found upon which work could be carried into practical effect. But was that immense work to be carried on simply by separate societies? It seemed to him it was the work of the profession as a whole, and that fact should be brought strongly before the National Veterinary Medical Association and the matter should be really under their direction. It was to the advantage of every man who gained his diploma as a veterinary surgeon to join his local society. (Hear, hear). Members of the profession who had joined the Central, had obtained nothing but benefit from their Fellowship. When a man joined a society, he was at first, perhaps a little diffident, feeling rather reluctant to put himself forward and present papers, probably because he was rather frightened of criticism. It was true that criticism was sometimes a little severe, but it did no harm. No doubt many members could remember times when they thoroughly enjoyed the criticisms, say, of Professor MacQueen—(laughter and cheers)—and that criticism was most helpful to a man—it was kindly and well meant, and if a man could stand it, he helped to build up his character. Therefore a man who joined the society strengthened himself and incidentally strengthened his profession. There were many men whose special talents, if they had not joined a society, might have been lost to the profession. Looking round the table that night, no doubt every member could name someone who, if he had not been a member of the Central Society, would scarcely have come to the same extent before the professional eye. For instance, Mr. McIntosh, who, if he had not been a member of the Central Veterinary Medical Society, there was every probability to think would have continued, with his national caution, to plough a lonely furrow, and the society would not have had the benefit of his sound common sense and his absolute honesty of purpose which made him rank so high in their estimation. It was valuable to have Mr. McIntosh on the Council of the governing body. (Hear, hear.)

Peace Medal Awards.

Before concluding, he had a very pleasant function to perform, and that was to present the Peace Medals which had been awarded by the Society to various members of the profession. The Society, in its enthusiasm for the victory which was gained by the Allies in the great war, decided it would present each year a medal, in commemoration of that victory, to the member of the Society or of the profession who, either by the contribution of a paper or by some signal good work, had benefitted the Society and the profession in general. It was desired particularly that that member should be honoured who had done most during the past year for the benefit of the Society. The first medal was for the year 1918—1919, and, when the question arose as to who should receive that first mark of recognition, everybody with one voice said it should be Mr. Hugh A. MacCormack, the Secretary. (Cheers.) Mr. MacCormack was an ideal secretary; he threw his energy into the Society and did work which entailed much time and trouble. Mr. MacCormack had been a Fellow of the Society for 26 years and Secretary for 17—(cheers)—and during the whole of that time, except on one occasion when a broken ankle made him physically incapable of attending, he had been present at every meeting. (Hear, hear.) As a man grew older, his energies were supposed to diminish and particularly during the war it was said that now is a time for young men only, but that was not the case with Mr. MacCormack, because, as he went on from year to year, his energy and his enthusiasm increased. The Society was very much indebted to him, and he had very great pleasure in calling upon Mr. MacCormack to receive the Medal for 1918—1919. (The President then presented Mr. MacCormack with the medal, amid enthusiastic cheers.) The medal for the year 1919—1920 was awarded by the Council to Mr. F. T. Harvey, of Cornwall, for his paper on "Some Points in the Natural History of Alveolar or Peridontal Disease in the Horse, Ox and Sheep." That paper was a most remarkable contribution to the study of comparative pathology and to clinical research. Mr. Harvey carried on a country practice in a small town or large village in Cornwall and was a very busy man, a typical English country practitioner doing long journeys day by day, and had very little time to spare, and therefore, in writing such a paper he had set an example to the whole profession. It was very unusual for a man in a busy country practice to manage to keep himself absolutely up-to-date in scientific and technical knowledge and also find time for such exceptional clinical research work.

(Hear, hear.) The paper was of outstanding merit, opening up a new vista, a new line of study untouched before. The profession felt proud that England could produce men sufficiently devoted to their profession to give time and study to comparative pathology. (Cheers.) (The medal was presented by the PRESIDENT to Mr. Harvey amid great applause.) The Medal for the Session 1920—1921 had been awarded to Major Frederick Hobday. (Cheers.) Major Hobday was probably the best known veterinary surgeon in the British Empire, and many who knew him felt that they could call him their friend. (Hear, hear.) He had been a real friend, not merely to the individual, but to the profession. During 1920—1921 he did one act of inestimable service to his profession, and it was for that reason particularly that the medal was presented—he referred to the steps Major Hobday took at very great personal trouble to bring the two professions into line. He had worked through the medium of the Central Veterinary Society and other societies, and through the Royal Society of Medicine to promote that good feeling and fellowship which was the foundation of the good work which was to follow in future years. (Professor Hobday received the medal from the PRESIDENT amidst great enthusiasm.)

"THE ALLIED PROFESSIONS."

Major F. T. G. HOBDAY, C.M.G., in proposing the toast of "The Allied Professions," thought it should have been called the allied branches of the one profession, the great profession of medicine, to which those belonged who claimed to have anything to do with the conquest of disease. It included the two human branches, the medical and the dental, the veterinary profession, and one that could claim to be older than either of them, the pharmaceutical. Without each other they could not exist, but united they formed a very strong body. The strides which had been made in all branches of medicine during the past few years had been enormous, and, although the war undoubtedly put a brake on advances in science in certain directions, it materially assisted in the development of others. Each branch of the profession had advanced its knowledge, and the comradeship developed during camp life helped to show how very much one could assist the other. The great advances made by vaccine therapy, the inoculations against fevers, tetanus, and so on, could never have received such impetus under the quiet conditions of civil life. War surgery made such strides as one never even dreamed of in medical and veterinary science in previous campaigns, and British medical science was well in the van in comparison with other countries. The establishment of a separate Dental Corps in the army confirmed the utility and absolute necessity for specialism in that direction, and at last it was becoming officially recognised, by the formation of a special Corps, that the health of an Army as well as of the civil population depended very materially upon teeth and digestion. The dental profession was at the present moment passing through a crisis, and other professions were watching with considerable interest what would happen from the registration and absorption into the profession of a large number of men who up to now had only been trained empirically, by experience. The Pharmaceutical Society had also had a busy time, as the wording of the Dangerous Drugs Act concerned them very closely, and so far that profession had come out with flying colours. The Act of Parliament dealing with the subject was so framed that it caused the minimum amount of trouble and inconvenience. Only a few days ago the Secretary for War unveiled a memorial at the Pharmaceutical Society to the memory of Lieut.-Colonel Harrison, who invented the small box respirator, whose use saved thousands of British lives. (Cheers.) Pharmacy owned no master and was acknowledged as essential by all branches of medicine, human and veterinary.

It was true, unfortunately, that veterinary science had been, and at the present time was, grossly neglected. The profession gave way to no other in its earnestness to be in the front in the fight against disease, and claimed its place in preventive medicine in connection with the diseases of man. Why is it that at the present day, in Great Britain, not one medical man in a thousand has ever seen a case of human glanders or rabies? The answer to the question is that each is primarily a disease of the animal world and has been checked in the first trench by the veterinarian; and, when once stamped out effectively from the animal world, it ceases to be a danger to man. If no veterinarians existed to control the diseases communicable from animals to man, glanders, rabies, foot-and-mouth disease, anthrax, certain forms of mange and ringworm, and a number of others would be prevalent. They all, and especially at the present moment one other, viz., tuberculosis, needed the medical and veterinary professions to work together. As Captain Elliot had said, the veterinary profession could "deliver the goods" if they had the chance, and therefore they asked for the chance.

The toast was drunk with acclamation.

Lieut.-Colonel NATHAN. RAW, C.M.G., M.P., in responding, said he had always had a very high appreciation of the work done by veterinary surgeons and recognised the close relationship between the veterinary and medical professions. The war gave the veterinary profession a great opportunity, which it took full advantage of, in the magnificent work it did. He was in France within a few miles of one of the finest veterinary hospitals at Neufchatel, where he saw the extraordinary care and scientific skill bestowed upon the horses and mules, with the result that thousands and thousands of animals were spared a great deal of unnecessary suffering and returned to the ranks. Every soldier was filled with admiration at the extraordinary care, kindness and sympathy shown to the animals engaged in the war. The veterinary profession made good, and he was sure that the prestige of veterinary science was increased enormously by that work. The relationship between veterinary science and medical science was

extraordinarily close, and he did not think the public really realised how important diseases of animals were in their relation to diseases of man. The veterinary profession formed the first trench, as Major Hobday had said, to protect human beings against an enormous amount of suffering and death. For that reason alone the veterinary profession was entitled to the very greatest credit and encouragement in performing the research work necessary for the stamping out of those diseases. The medical profession looked upon the science of veterinary medicine as of enormous importance in safeguarding human beings against disease. There was one disease which was of special importance, tuberculosis. The relationship between animal and human tuberculosis was extraordinarily important. When one remembered that at least 10,000 children were killed every year in England by drinking tuberculous milk, and that many thousands of children were crippled from the same cause, the extraordinary importance of study and research between veterinary science and medical science for the extermination of that disease would be appreciated. Recently the matter had been brought before the House of Commons, but in these days of strict economy and high taxes it was quite impossible to ask Parliament to undertake any great campaign against tuberculosis in cattle, although it was very well known that there were at the present moment a million dairy cows in this country suffering from the disease. If all the cattle were killed, it would cost about £40,000,000, which the taxpayer was not prepared to pay, and even if all the cattle were destroyed there would be still another generation of cattle coming on. Therefore it was necessary to spend a large amount of money in developing research between veterinary and medical science to try, if possible, not to exterminate tuberculosis in cattle, but to develop some method by which tuberculosis in cattle could be prevented. Therefore, research scholarships and endowed scholarships were necessary for young rising veterinary surgeons, who would then have the opportunity of devoting themselves to the study of those very important diseases. He strongly emphasised the importance of close collaboration and cohesion between the medical profession and the veterinary profession, especially in the development of research for the investigation and eradication of all the diseases which could be stamped out, and any efforts of his own and his colleagues in Parliament towards that object would be most willingly given. (Cheers.)

Dr. WALTER HARRISON, in responding for the dental profession, said the new Dentists Act admitted a large number of men whose experience in many cases was very limited, and they were going to be given the same title as the qualified dentist. It was a noble sacrifice on the part of the dental profession. (Hear, hear.) There were some good points in the Act, one being the prohibition of unregistered practice, and there was also control over those who would be taken on to the register. It was hoped there would be a surplus fund to encourage research and scholarships. So that on the whole, although no doubt the benefits of the Act would not be felt at once, the profession in the future would be able to look back and see that they had been wisely guided. He did not think the dental profession realised the enormous amount of work carried out by the veterinary profession in comparative anatomy and pathology, and he was delighted to think that Mr. Harvey's paper had had some effect in bringing it home. He would plead for joint meetings between the dental profession and the veterinary profession, because the results were bound to be of value. The dental profession had done a large amount of work in connection with school children's teeth, work which was of the utmost importance. (Hear, hear.)

Mr. E. T. HEATHERCOAT, J. P. (President of the Pharmaceutical Society of Great Britain), said pharmacists had watched with tremendous interest the great strides made by the veterinary profession during the last ten years, and on behalf of the Pharmaceutical Society he wished to pay a tribute to the great war record of the R.A.V.C. and a tribute of appreciation of the great work that had been done by every member of the Central Veterinary Society in all parts of the United Kingdom, in the diagnosis and treatment of disease. (Cheers.)

"THE PAST PRESIDENT."

Major P. J. SIMPSON, D.S.O., in proposing the toast of the Past President, said that if a secretary had not a good president he would not be able to do very much for his society. The past year had proved that the Council of the Central Veterinary Society, when it elected Major-General Sir Layton Blenkinsop to the Presidential chair, had made a very wise choice indeed. (Hear, hear.) He would mention three facts to prove that: the regular attendance of the Council at the meetings, the large attendance at the sessional meetings, and the large gathering that had assembled that evening. They were all evidences of the way in which Sir Layton Blenkinsop had conducted the Society during his year of office. In his position as Director-General of the Army Veterinary Service he had worked wholeheartedly for the good of the R.A.V.C., and his work had not been in vain; he had helped to raise the status of that Corps. His whole heart was with the general practitioners also, and he was looking after them as well as he was looking after the army men. He was also most anxious, as everyone knew, to see the general standard of education of the veterinary student advanced. Sir Layton Blenkinsop had proved himself tactful, with a sound knowledge of men and matters, and those who had attended the meetings would know how harmoniously they had passed off and how well he had guided the Society. In Sir Layton Blenkinsop, the veterinary profession had an honoured friend and the Society had a stout fighter for its rights.

(To be continued).

North of Scotland Division of the N.V.M.A.

The half-yearly meeting of this Division was held in Marischal College, Aberdeen, on October 16th, 1921.

There were present, Messrs. Anderson, Keith; Brown, College of Agriculture; Cumming, Peterculter; Crabb, senior, New Aberdour; Crabb, junior, Strichen; Clerk, Stonehaven; Hepburn, Aberdeen; Howie, Alford (Hon. Secretary); Kerr, Ellon; Lornie, Turriff; McPherson, Huntly; McVean, Craigellachie; McFarlane, Aberchirder; Niven, Inverurie (President); Robson, Laurencekirk; Sievwright, Tarland.

Visitors.—Dr. Bradley, Edinburgh; Dr. James McI. McCall, Ministry of Agriculture; James McAllen, Aberdeen; and Wallace, Aberdeen.

Apologies for absence were received from Messrs. McLeod, Hatton; Peddie, Auchterhouse; Beattie, Longside; and Anderson, senior, Keith.

New Members.—James McAllan, M.A., M.R.C.V.S., proposed by Mr. Brown, seconded by Mr. Hepburn; Mr. Wallace, M.R.V.C.S., proposed by Mr. Kerr, and seconded by Mr. James Anderson.

The minutes of the last meeting, as they appeared in the *Veterinary Record*, were taken as read.

The SECRETARY read a letter from the County Clerk of Aberdeenshire, intimating that the County Council had agreed to grant to Veterinary Inspectors an increase of 3d. per mile on travelling allowances, being now 9d. per mile each way, instead of 6d. per mile as formerly.

An address, which will be found in full in our last issue, was then delivered by Dr. O. C BRADLEY, Edinburgh, on the subject of "Professional Unity." Dr. Bradley was cordially welcomed by the President and introduced to the members.

Mr. NIVEN (President), in thanking Dr. Bradley, said that he had given them a most admirable address, which should stimulate those of them who were not already members of the N.V.M.A. to join up at the earliest possible moment. They were greatly indebted to Dr. Bradley for coming north to give them such a rousing and such a polished address. It had been more than a pleasure to listen to him.

Dr. MCCALL said it was a great pleasure to be present and to listen to Dr. Bradley. He was greatly interested in what he had said about the difference between uniformity and unity. The aims and objects of the N.V.M.A. had been clearly brought before them. At least two-thirds of the members of the profession should be members of the National. He had to thank Dr. Bradley for his most excellent address and the North of Scotland Society for the privilege of listening to it.

Major W. S. LORNIE, Turriff, then read a paper (copiously illustrated) on "The Sulphuration Treatment of Mange."

(Mr. Lornie's paper will appear in a future issue.—Ed.)

Mr. Lornie was thanked for his paper by the President, and discussion of it was postponed until next meeting, as there was no time to do justice to such a big subject.

ELECTION OF OFFICERS.

President, Mr. Hugh McVean, Craigellachie; *Senior Vice-President*, Mr. W. S. Lornie, Turriff; *Junior Vice-President*, Mr. W. H. Robson, Laurencekirk; *Secretary and Treasurer*, Mr. George Howie, Alford.

Members of Council.—Wm. Anderson, James Anderson, David Crabb, Wm. McPherson, Adam Sievwright, James Murray, R. E. Drennan.

After the usual votes of thanks, the members and guests adjourned to the Imperial Hotel, where they lunched together, under the genial chairmanship of the President, Mr. Alex. Niven. After the loyal and patriotic toasts, on the call of the chairman, the health of their guest, Dr. Bradley, was pledged, with musical honours.

GEORGE HOWIE, *Hon. Secretary.*

Notes and News

Foot-and-Mouth Disease in Kent.

A serious outbreak of foot-and-mouth disease was discovered on November 24th, among some Irish cattle on a farm at Underriver, near Sevenoaks. The cattle were stated to have been purchased at Tonbridge market.

The outbreak, states *The Times* Correspondent, will do great injury to the Christmas trade in this part of Kent, as it will probably necessitate the closing of Maidstone, Tonbridge, Sevenoaks, Bromley, and other markets within a 15-mile radius.

Owing to the outbreak, the Tonbridge fat stock show, arranged for the Monday and Tuesday, was abandoned, and the dinner at which Lord Hollenden, the president, was to have taken the chair was not held.

In Great Britain the total number of cattle has decreased 55,500, or less than 2 per cent., but the number of cattle under one year has increased by 217,500, whilst if we consider the United Kingdom as a whole there is a total increase of 118,800 in the number of cattle, those under one year having increased by over a quarter of a million. In sheep the recovery is even more remarkable, the total increases in the number of sheep being 423,500 in England and Wales, 285,400 in Scotland, and 122,700 in Ireland. There has been a very slight falling off in the number of pigs in Ireland, which are 5,200 less than last year, but this is very small compared with the enormous increase (640,000) in Great Britain.

Mr. D. D. Morton and Mr. S. W. de Villiers, two Government scholars, who have just returned to South Africa from Edinburgh, where they took their degree of M.R.C.V.S., have been appointed to the Veterinary Division staff.

There has been an extraordinary slump in the price of farm horses during the past few months. First-rate animals command a fair price, but second-rate horses are unsaleable. At a dispersal sale on Deeside the other day

two horses were sold for £13. One of them had been purchased rather more than a year ago for £100. At the same sale another horse was actually knocked down to a dealer for a half a crown, less than the price of one of its shoes. Scottish horse-breeders tell of a farmer's retort to a dealer who was endeavouring to clinch the sale of a couple of horses, "But you'll have to give me a luck-penny," said the dealer. "Na, na, never a luck-penny," the farmer replied. "But I'll tell you what I'll dae: I'll throw in anither bit horsie tae ye."

Birth.

TRIGGER.—On November 2nd, the wife of William Trigger, F.R.C.V.S., Newcastle, Staffs, of a son.

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

A Successful Non-Slip Pad.

Sir,—I noticed in your current issue a communication about Gray's Pads to prevent horses slipping, by Mr. B. de Vine.

Anyone who has not used these pads has, in my opinion, missed taking advantage of a great improvement in the ordinary frog and leather pad. Last season I hunted two horses shod behind with these pads, to prevent slipping on the tarred roads going to the meets, and neither horse threw a shoe or pad. I do not recommend them for the fore feet of hunters, nor do I find them necessary. If a horse can stand up behind, he will not let you down on the road. If used in front they would probably be wrenched off by the toes of the hind shoes in deep ground, or in landing whilst jumping.—Yours truly, W. S. STEVENS.

Southill, Wincanton, Somerset, 16*th November*, 1921.

The Burdizzi Castrator.

Sir,—Replying to the note regarding the use of "Burdizzi's Castrator" which appears in to-day's *Veterinary Record*, it is bad practice to include the whole scrotum, as sloughing is most likely to follow. Each testicle should be operated on separately, and no more scrotum than is necessary to crush the cord should be included.—Yours faithfully, JAS. RUSSELL.

Invergordon, 19th November, 1921.

Army Veterinary Service.

LONDON GAZETTE—WAR OFFICE.—TERRITORIAL FORCE.

November 15th.—Captain J. Hill resigns his commission (November 16th), and retains the rank of Captain.

REGULAR FORCES.

November 23rd.—Temporary Captain J. Hill, O.B.E., relinquishes his commission on completion of service (June 24th), and retains the rank of Captain.

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaughtered as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange. Outbreaks reported by the Local Authorities.	Parasitic Mange. Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Week ended 19th November, 1921	...	...	6	6	...	...	...	...	15	20	15	25	5
Corresponding Week in 1920	2	...	14	14	1	...	1	1	31	45	17	23	6
Corresponding Week in 1919	...	...	8	9	...	86	...	...	76	144	7	44	17
Corresponding Week in 1918	5	1	4	4	...	...	1	3	85	154	12	15	1
Total for 47 weeks, 1921 ...	22	1	440	560	43	2958	11	41	1907	2891	478	1130	418
Corresponding period in 1920	32	...	388	463	79	10115	14	23	3332	5479	388	1695	685
Corresponding period in 1919	147	5	205	272	69	3045	22	58	4489	8876	288	2113	973
Corresponding period in 1918	77	3	222	256	3	40	31	92	3928	7326	297	1276	517

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND.							Outbreaks				
Week ended 19th November, 1921	...	...	...	...	...	...	...	2	4	26	
Corresponding Week in 1920 ...	...	...	...	...	...	...	...	8	...	3	
Corresponding Week in 1919 ...	...	...	...	...	...	...	...	3	...	...	
Corresponding Week in 1918 ...	...	...	...	...	...	...	1	10	1	36	
Total for 47 weeks, 1921	1	1	7	77	...	...	72	244	110	89	
Corresponding period in 1920 ...	1	1	...	...	1	3	90	306	13	38	
Corresponding period in 1919 ...	...	...	...	...	1	1	134	243	30	93	
Corresponding period in 1918 ...	2	2	...	...	...	...	94	289	27	123	

NOTE.—The figures for the current year are approximate only.

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